Please read and save these instructions. Read carefully before attempting to assemble, install, operate or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage! Retain instructions for future reference.

Dayton® Diesel Electric Generator

Description

Dayton professional-duty generators are rugged and compact. These models provide dependable, trouble-free service. The alternators are brushless with revolving fields. Yanmar diesel engines provide long life under heavy use. These engines are governed to maintain engine speed of 3600 RPM under load. 3600 RPM engine speed provides 120/240V, 60 Hz power. Additional features include circuit breaker protection, spark-arresting muffler, large fuel tank, oil alert system (model 4W315B only), electric starter (model 4W315B only), and a pressurized lubrication system.

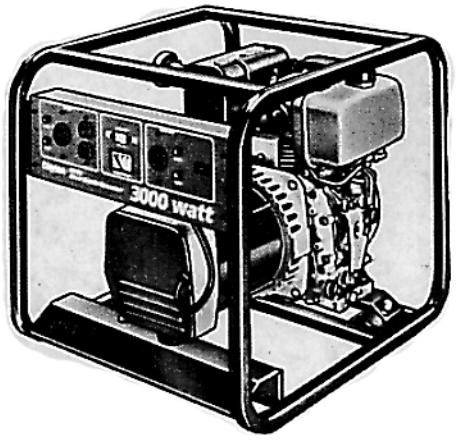


Figure 1 – Model 3ZC06B

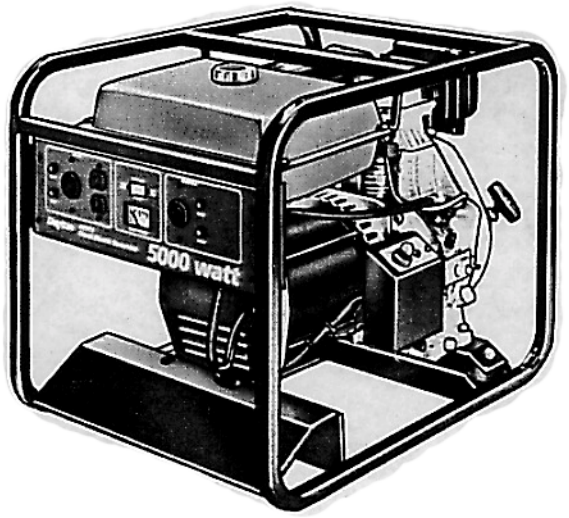


Figure 2 – Model 4W315B

Unpacking

1. Remove generator from carton.
2. Remove any protective packaging applied to generator for shipment.
3. Check for loose or missing parts. Check for shipping damage. If any parts are missing or damaged, promptly inform dealer where you bought generator.
4. Battery cables are supplied for model 4W315B only. These cables are in a separate bag inside generator carton. You must install these cables to engine. See *Battery,* page 7 for installation instructions.

Dayton® Diesel Electric Generator

Specifications

ELECTRICAL SPECIFICATIONS

Model	Rated Wattage*	Maximum VA	Rated Amperage 120V	Rated Amperage 240V
3ZC06B	3000	4000	25	12.5
4W315B	5000	6500	41.7	20.8

* Single-phase, 1.0 power factor
NOTE: Ratings apply to SAE standard conditions. Reduce ratings 3 1/2% for each 1000 feet above sea level and 1% for each 10° Fahrenheit rise above 60°F.

GENERAL SPECIFICATIONS

Model	Yanmar Engine H.P.	Yanmar Model	Fuel Type	Fuel Tank Capacity	Oil Alert System	Electric Start	Weight (pounds)
3ZC06B	6	L60	Diesel	0.9 gal.	No	No	168.5
4W315B	9	L90	Diesel	4.2 gal.	Yes	Yes	241

RECEPTACLE SPECIFICATIONS

Model	120V Duplex	120V, 30-Amp Twist-Lock	120/240V, 20-Amp Twist-Lock	120V Full Power Switch
3ZC06B	Yes	Yes	Yes	Yes
4W315B	Yes	Yes	Yes	Yes

ELECTRICAL COMPONENT SPECIFICATIONS

Model	Resistance in Ohms				Capacitor, MFD 450 Volt	Diodes (2) 800 Volt
	Stator Main Winding *	Stator Auxiliary Winding	Rotor Primary Winding †	Rotor Secondary Winding †		
3ZC06B	0.71	2.17	0.54	2.07	40	70 Amp
4W315B	0.54	1.38	0.61	2.29	50	70 Amp

(*) Connect T2 (green) and T3 (black). Measure resistance between T1 (red) and T4 (yellow).
( ) Resistance between br own and white leads.
(†) Remove diodes to check resistance.

Models 3ZC06B and 4W315B

Product Identification

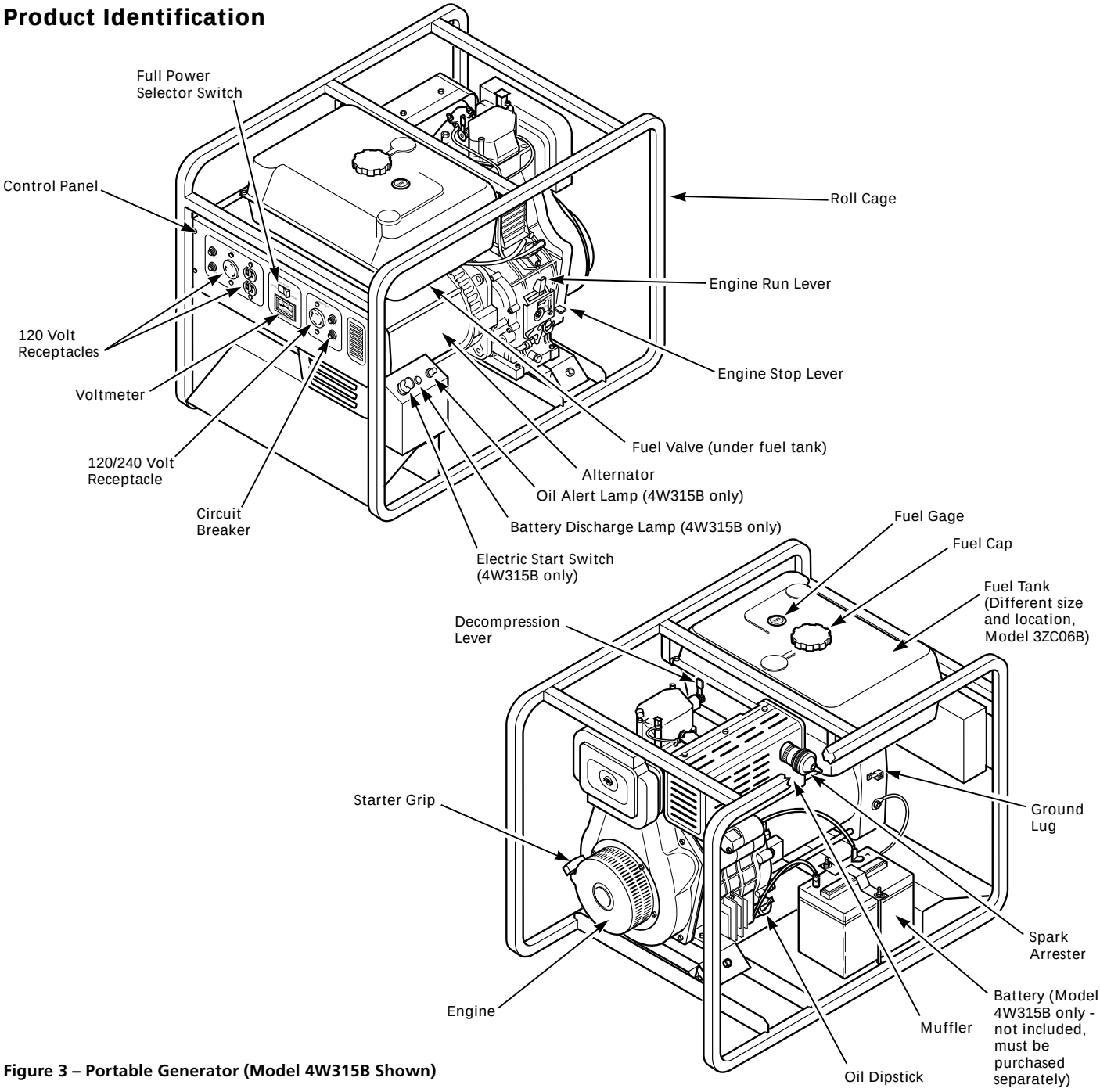


Figure 3 – Portable Generator (Model 4W315B Shown)

Dayton® Diesel Electric Generator

General Safety Information

IMPORTANT: Read these instructions and engine owner's manual carefully. Become familiar with generator before trying to operate or service it. Know its uses, limitations, and any hazards involved. Improper use of generator can cause severe injury or death from explosion, fire, burns, electrical shock, or carbon monoxide poisoning.

Make certain you read and understand all warnings. Keep these instructions for reference. They are your guide to safe and proper operation of this generator.

Safety information appears throughout these instructions. Pay close attention to them. Below are definitions for the safety information listed throughout this manual.

⚠ DANGER Under this heading, installation, operating, and maintenance procedures or practices will be found that, if not carefully followed, WILL result in IMMEDIATE serious personal injury or death.

⚠WARNING Under this heading, installation, operating, and maintenance procedures or practices will be found that, if not carefully followed, COULD result in severe personal injury or death.

⚠ CAUTION Under this heading, installation, operating, and maintenance procedures or practices will be found that, if not carefully followed, COULD result in minor personal injury, product or property damage.

⚠ DANGER ***Engine exhaust contains poisonous carbon monoxide gas. Overexposure will cause loss of consciousness and will lead to death. Use only in well-vented areas. Make sure area has plenty of free-moving, fresh, outside air. Never run generator in an enclosed or confined area. Never run generator inside occupied building.***

Early signs of carbon monoxide poisoning resemble the flu, with headaches, dizziness, or nausea. If you have these signs, get fresh air at once! Some people are more affected by carbon monoxide than others. These include pregnant women, persons with heart or lung disease or anemia, those under the influence of alcohol, and those at high altitudes.

⚠WARNING ***Diesel fuel presents a hazard of fire. Diesel fuel is flammable.***

- ***Keep fuel out of children's reach.***
- ***Refuel generator in a well-vented area. Do not fill fuel tank in the dark. Do not refuel while engine is running. Unhook all electrical loads and shut off engine before refueling.***
- ***Do not overfill fuel tank. Always allow room for fuel to expand. If you overfill tank, fuel can overflow onto hot generator. This can cause fire. After refueling, tightly close fuel tank cap.***
- ***Do not spill fuel. If fuel spills, make sure area is dry before starting engine.***
- ***Never smoke in refueling area. Never allow open flames or sparks in area.***
- ***Store fuel in approved container. Store fuel in a well-vented area free of open flames or sparks.***

⚠WARNING ***Guard against fire hazard. Keep operation area well-vented. Keep generator at least three feet away from any object. Do not place flammable objects near generator.***

- ***Do not use generator where flammable vapors are present. Some vapors are heavier than air. These vapors settle in low-lying places.***
- ***Do not use generator in enclosed spaces. This includes motor home or RV generator compartments.***

⚠WARNING ***Guard against electric shock. Generator produces high voltage. This high voltage can cause severe electric shock. Only responsible adults should use the generator.***

- ***Properly ground generator before starting.***
- ***Never let anyone operate or service generator without proper instructions.***
- ***Avoid contact with live terminals or bare wires.***
- ***Do not use generator outdoors in rain or snow.***
- ***Do not use generator near standing water or snow.***
- ***Do not use if generator is wet or damp.***
- ***Do not use generator in highly conductive areas. These areas include metal decking and steelwork.***
- ***Only use grounded extension cords.***
- ***Do not use any worn or damaged electric cords. Electric shock or damage to generator may result.***
- ***On construction sites, you must use a Ground Fault Circuit Interrupter (GFCI). This helps guard against electric shock. OSHA and the National Electrical Code requires this.***
- ***Do not wear damp clothing or wet shoes when using generator.***

Models 3ZC06B and 4W315B

General Safety Information (continued)

⚠WARNING ***Guard against burns. Hot engine parts can cause severe injury. Use caution and remain alert when using generator.***

- ***Keep children and animals away from generator while it is running or hot.***
- ***Keep all covers and shields in place. Keep them tightly secured.***
- ***The muffler becomes very hot during operation. The muffler remains hot for a while after shutdown. Do not touch muffler while it is hot. Do not let muffler touch anything flammable. Let engine cool before transporting or storing.***

⚠WARNING ***Have standby installation to home or building performed by a licensed electrician. Do not let anyone else wire into a utility circuit. Personal injury, equipment damage, or damage to home could occur.***

⚠WARNING ***Never connect generator to any existing electrical circuits. The generator output will back-feed into the utility power line. This may electrocute a power company line repair person. Also, if generator is powering electrical circuits, the chance of an electrical fire exists.***

⚠WARNING ***Battery gives off explosive gases. Keep sparks, flames, and cigarettes away. Do not remove or install battery cables when engine is cranking or running. Only service or use battery in a well-vented area.***

⚠WARNING ***Battery contains sulfuric acid. Battery acid is poisonous if swallowed. Contact with skin or eyes may cause severe burns. Do not tilt generator with battery installed. Tilting could cause battery acid to spill. Wear protective clothing and face shield when servicing. Keep out of children's reach.***

⚠WARNING ***Only a qualified electrical service person should service and repair generator.***

- ***Generator produces high voltage. Use extreme caution when working on electrical parts.***
- ***When working on generator, avoid hot muffler, exhaust manifold, and engine parts. Severe burns may occur.***
- ***Do not work on generator when tired.***
- ***Use only factory approved replacement parts.***

⚠WARNING ***Store generator in a well-vented area. Make sure fuel tank is empty. Never store with fuel in tank.***

⚠ CAUTION ***Never operate generator***

- ***if engine speed changes greatly***
- ***if engine misfires often***
- ***if powered items overheat***
- ***if electrical output drops***
- ***if it is sparking***
- ***if it produces smoke or flames***
- ***if it vibrates at high levels***
- ***if it has a damaged receptacle***

⚠ CAUTION ***Keep generator and nearby areas clean.***

- ***Keep generator free of oil, mud, and other foreign matter.***
- ***Remove anything that creates slippery areas around generator.***
- ***Remove oily rags and other items that create fire hazards.***
- ***Keep a fire extinguisher nearby. Make sure it is rated ABC by the NFPA. They are good for all uses. Consult your local fire department.***
- ***Keep fire extinguisher well maintained. Be familiar with its use.***

⚠ CAUTION ***Know how to stop engine quickly. Know how to use all controls.***

⚠ CAUTION ***Prolonged exposure to loud noise can cause hearing loss.***

- ***When working around generator, wear approved hearing protection.***
- ***Remember neighbors when using generator.***

Generator Features

OIL ALERT SYSTEM (MODEL 4W315B ONLY)

The oil alert system protects the engine from low oil damage. This system automatically shuts down the engine and prevents engine restarting if the oil pressure falls too low.

If this system shuts down the engine, the engine will not start until you add oil. The oil alert lamp is near engine starter switch (see Figure 4, page 6). Add oil to engine (see *Engine Oil*, page 8).

See engine owner's manual for more information.

Dayton® Diesel Electric Generator

Generator Features (continued)

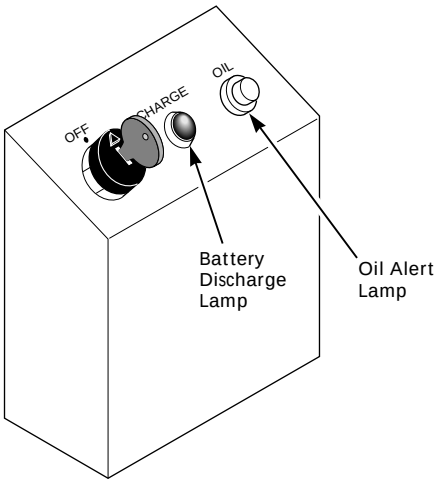


Figure 4 - Battery Discharge Lamp and Oil Alert Lamp Location

BATTERY DISCHARGE LAMP (MODEL 4W315B ONLY)

The battery discharge lamp (see Figure 4, above) will light if battery charger is not operating while engine is running. If this happens, the battery will not charge and will eventually run down. Have battery charging circuit repaired by authorized service person.

FULL POWER SELECTOR SWITCH

The full power selector switch is on the control panel. The switch has two positions: 120 VOLT ONLY, and 120/240 VOLT.

120 VOLT ONLY: This position sends full power to the 120V receptacles only. 240V power is not available. Use this position when powering 120V items only.

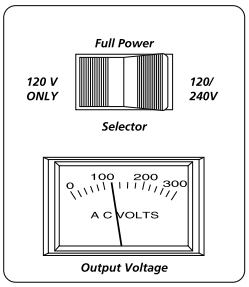


Figure 5 – Full Power Selector Switch in 120 Volt Only Position

120/240 VOLT: This position sends full power to the 120/240V receptacle. It also powers the 120V receptacles at reduced wattage capacity.

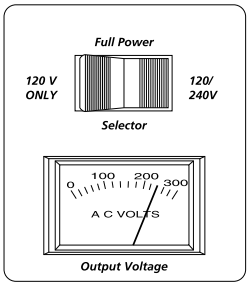


Figure 6 – Full Power Selector Switch in 120/240 Volt Position

IMPORTANT: Do not move the full power selector switch while powering electrical items. Unplug all items before moving switch. Failure to do so can damage switch.

VOLTMETER

The voltmeter is on the control panel. The voltmeter shows the generator output voltage (see Figure 7).

120 VOLT ONLY full power switch position: The voltmeter will show about 120V under load.

120/240 VOLT full power switch position: The voltmeter will show about 240V under load.

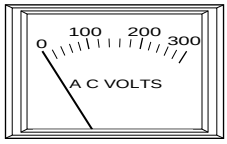


Figure 7 – Voltmeter

ELECTRIC START (MODEL 4W315B ONLY)

Model 4W315B has an electric starter. A battery is not supplied with generator. You must provide a 12-volt, 45-amp-hour battery. For more battery information, see *Battery*, page 7.

RECEPTACLE CIRCUIT BREAKER

The circuit breakers protect the receptacles and alternator. Overloading generator will trip circuit breaker. A short circuit in item being powered will also trip breaker. If this occurs, unplug electrical load from receptacle. Let circuit breaker cool down. Push circuit breaker button to reset.

Electric motors need higher starting current. They require up to 3-times their rated wattage to start. The starting current needed may be too high. This can cause nuisance circuit breaker tripping. To help prevent this, start electric motors first. Connect additional items to generator after starting motors. If this continues to happen, reduce the total generator load.

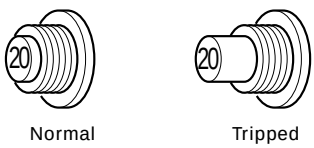


Figure 8 – Receptacle Circuit Breaker Button

Models 3ZC06B and 4W315B

Generator Features (continued)

SPARK ARRESTER

We ship a spark arrester with this generator. You must install spark arrester to muffler (see Figure 9).

A spark arrester is required if using generator in a national forest and other designated state and local areas. Check local codes.

The spark arrester needs periodic cleaning. A dirty spark arrester reduces engine output and increases fuel consumption. It also makes starting difficult. See engine owner's manual for cleaning instructions.

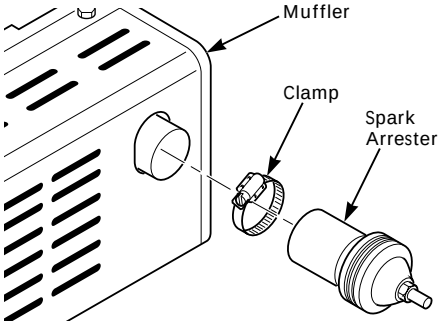


Figure 9 - Installing Spark Arrester

Assembly

BATTERY (MODEL 4W315B ONLY)

⚠WARNING ***Battery gives off explosive gases. Keep sparks, flames, and cigarettes away. Do not remove or install battery cables when engine is cranking or running. Only service or use battery in a well-vented area.***

⚠WARNING ***Battery contains sulfuric acid. Contact with skin or eyes may cause severe burns. Do not tilt generator with battery installed. Tilting could cause battery acid to spill. Wear protective clothing and face shield when servicing. Keep out of children's reach.***

- ***If battery acid gets on your skin, wash with water.***
- ***If battery acid gets in your eyes, flush with water at least 15 minutes. Call a doctor at once.***

Battery acid is poisonous.

- ***If swallowed, drink large amounts of water or milk. Follow with milk of magnesia or vegetable oil. Call a doctor at once.***

⚠ CAUTION ***If you remove battery, insulate the red, positive (+) battery cable terminal. Insulate with electrical tape. Exposed terminal may spark when generator runs.***

IMPORTANT: Make sure battery connections are the correct polarity. Electric start generators use negative ground, 12-volt DC starting system.

Model 4W315B has an electric starter. A battery is not supplied with generator. You must provide a 12-volt, 45-amp-hour battery. The positive and negative battery cables are supplied with generator. You must install these cables before mounting battery.

Always wear safety glasses when working with battery. Make sure battery terminals are clean. Make sure cable connections are tight.

Always shut down engine before removing or attaching battery cables. Always remove the negative (–) cable first. Always attach negative (–) cable last.

INSTALLING BATTERY CABLES TO ENGINE

1. Attach the red, positive (+) battery cable to the starter solenoid on engine (see Figure 10).

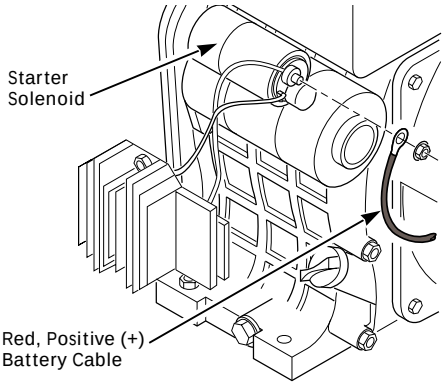


Figure 10 – Connecting Red, Positive (+) Battery Cable to Starter Solenoid on Engine

2. Attach the black, negative (–) battery cable to the engine block. Use the bolt, nut, and two washers provided with the battery cables. Attach cable as shown in Figure 11.

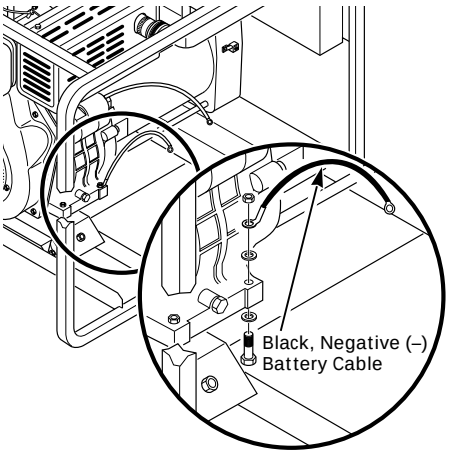


Figure 11 – Connecting Black, Negative (–) Battery Cable to Engine Block

Dayton® Diesel Electric Generator

Assembly (continued)

MOUNTING BATTERY TO GENERATOR

1. Secure battery to generator by battery hold-down system. This system consists of the battery mounting bracket, hook bolt, and nut (see Figure 12).

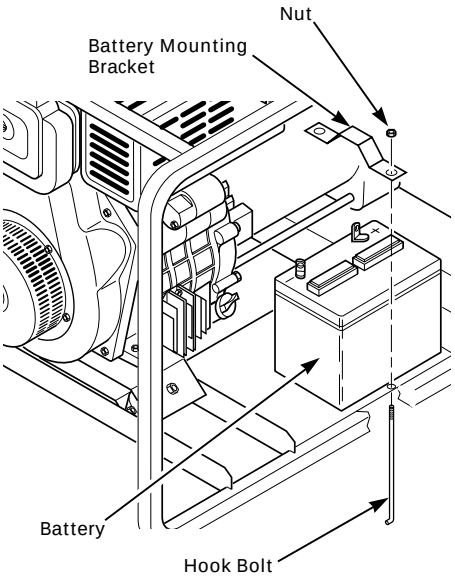


Figure 12 – Battery Hold-Down System

2. Locate the red, positive (+) battery cable from starter solenoid. Connect it to the positive (+) battery terminal (see Figure 13).
3. Locate the black, negative (–) battery cable attached to engine block. Connect it to the negative (–) battery terminal (see Figure 13).
4. Check battery before starting engine. Make sure fluid levels are full. Make sure battery is charged.

See engine owner's manual for more information.

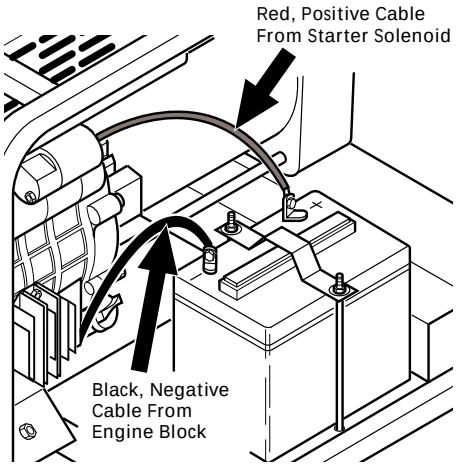


Figure 13 – Connecting Positive and Negative Cables to Battery

Installation

FUEL

⚠WARNING ***Diesel fuel presents a hazard of fire. Diesel fuel is flammable.***

- ***Keep fuel out of children's reach.***
- ***Refuel generator in a well-vented area. Do not fill fuel tank in the dark. Do not refuel while engine is running. Unhook all electrical loads and shut off engine before refueling.***
- ***Do not overfill fuel tank. Always allow room for fuel to expand. If you overfill tank, fuel can overflow onto hot engine. This can cause fire. After refueling, tightly close fuel tank cap.***
- ***Do not spill fuel. If fuel spills, make sure area is dry before starting engine.***
- ***Never smoke in refueling area. Never allow open flames or sparks in area.***
- ***Store fuel in approved container. Store fuel in a well-vented area free of open flames or sparks.***

Use clean, fresh, diesel fuel. Use diesel fuel with cetane rating of 45 or higher. Avoid getting dirt, dust, or water in fuel tank. See engine owner's manual for more information.

ENGINE OIL

We ship the generator without oil in the engine crankcase. You must add oil before starting engine. See *Engine Lube Oil*, page 9 for specific oil type.

CHECKING OIL LEVEL AND ADDING OIL

Follow steps below to check oil level. Make sure engine is level and stopped.

1. Remove dipstick (see Figure 14). Wipe dipstick clean.
2. Insert dipstick into oil filler neck. Do not screw it in. Oil level should be at top of filler neck. Oil should cover most of dipstick.
3. If level is low, fill to top of oil filler neck (see Figure 14). Use proper lube oil to preserve your engine.

NOTE: If oil level is too low, oil alert system will shutdown engine and prevent engine from restarting (model 4W315B only).

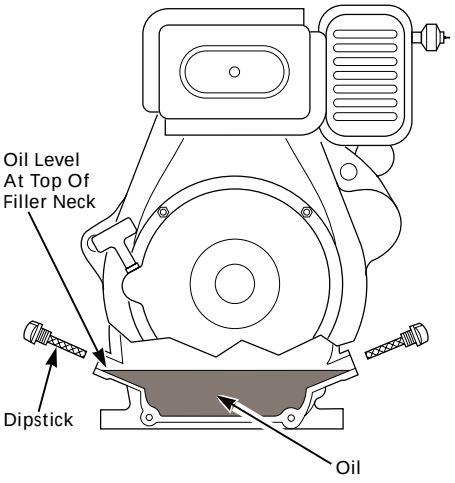


Figure 14 – Checking Oil Level

Models 3ZC06B and 4W315B

Installation (continued)

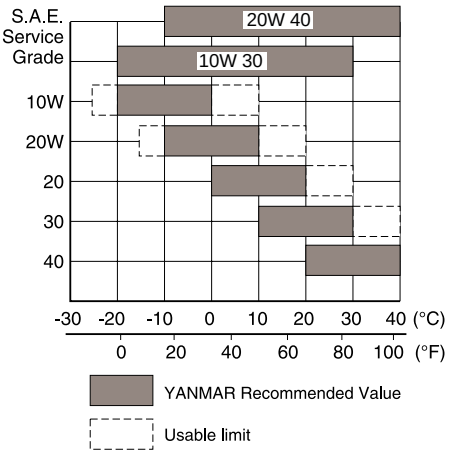
ENGINE LUBE OIL

Nothing affects the performance and durability of your engine more than the lube oil you use. Using inferior oil or not changing oil regularly increases the risk of piston seizure, piston ring sticking, and accelerated wear of cylinder liner, bearing and other moving parts. Your engine life may be seriously shortened. Yanmar recommends CC/CD oil of API engine service classification, stock number 4ZF20.

Always use oil with the right viscosity for the ambient temperature in which you are using the engine. Use the chart below when choosing your engine oil.

Lube Oil Capacity:

3ZC06B 1.16 qt.
4W315B 1.74 qt.



VENTILATION

⚠ DANGER ***Use only in well-vented areas. Make sure area has plenty of free-moving, fresh, outside air. Never run generator in an enclosed or confined area. Never run generator inside occupied building. Engine exhaust contains poisonous carbon monoxide gas. Overexposure will cause loss of consciousness and will lead to death.***

This generator needs cooling air to run properly. Never block free-flowing, cooling air to generator. Overheating will occur without cooling air. This will damage the generator. Keep generator at least three feet away from any object.

GENERATOR GROUNDING

⚠WARNING ***You must properly earth-ground generator before starting. This will help guard against deadly electric shock. Only use grounded plugs with generator. Only use grounded extension cords. Only use three-wire or double-insulated power tools.***

Grounding generator helps prevent electric shock from a ground fault condition.

Locate ground lug on end of generator housing (see Figure 15). Attach a #10 stranded-copper ground wire to ground lug. Drive grounding point into ground. Grounding point can be a stake, grounding rod, or pipe. Grounding point should be copper or brass. Attach ground wire to grounding point. You must supply the ground wire and grounding point. They do not come with generator. Follow the National Electrical Code and all state and local codes. Consult your power company or a licensed electrician.

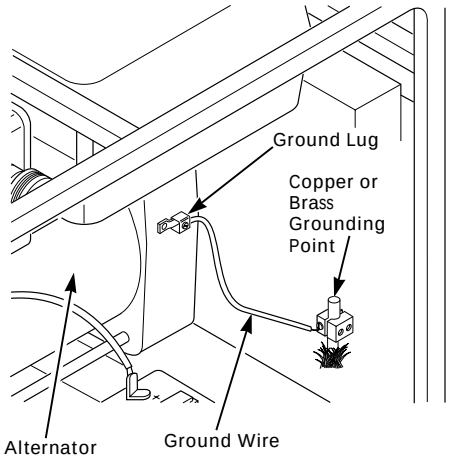


Figure 15 – Grounding Generator

⚠WARNING ***For a grounding point, do not use metal pipe being used to carry combustible materials or gases.***

DUST, DIRT, RAIN, AND SNOW

⚠WARNING ***Do not use generator outdoors in rain or snow. Do not use generator near standing water or snow. Do not use if generator is wet or damp. Operating generator in these conditions increases the risk of electrocution. Severe injury or death can occur.***

Do not use generator in extremely dusty or dirty conditions. This will severely affect its life. Keep generator clean. Do not allow dust, dirt, rain, or snow to collect on it. Protect generator from outdoor elements.

Dayton® Diesel Electric Generator

Installation (continued)

EXTENSION CORDS

Only use grounded extension cords. Be sure to use extension cord with proper wire gauge size. See chart below.

RECOMMENDED MINIMUM WIRE GAUGES (AWG) FOR EXTENSION CORDS

Ampere Load	AWG for 50' Cord	AWG for 100' Cord	AWG for 150' Cord
2	18	18	18
3	18	18	18
4	16	16	16
5	16	16	16
6	16	16	14
8	16	14	12
10	16	14	12
12	14	14	12
14	14	12	10
16	12	12	10
20	10	10	8

GROUND FAULT PROTECTION

Ground Fault Circuit Interrupter (GFCI) helps guard against electric shock. On construction sites, you must use a GFCI. OSHA and the National Electric Code requires this.

You must provide the GFCI device. Purchase GFCI at any electrical supply house. Check the Yellow Pages for the nearest supply house.

STANDBY INSTALLATION TO HOME OR BUILDING

⚠WARNING ***Have standby installation performed by a skilled, licensed electrician. Do not let anyone else wire into a utility circuit. Personal injury, equipment damage, or damage to home could occur.***

IMPORTANT: This generator will not power your entire home. Most home utility electric service is more than 60 amps. This will exceed generator output. Only power needed items during a power outage. Make sure total wattage of electrical load does not exceed rated wattage of generator.

You can use this generator as a standby power source. During a power outage, the generator will power selected items in a building. Have generator and additional wiring installed by a skilled, licensed electrician. This is not a do-it-yourself job. Follow all local codes.

⚠WARNING ***The electrician must install a double-throw transfer switch. This isolates existing electrical circuits from the utility power line. If not isolated, generator output will back-feed into utility power line. This may electrocute a power company line repair person.***

DETERMINING ELECTRICAL LOAD FOR GENERATOR

You must decide what electrical load your generator can power. Do this before using generator. Use the following four-step method. It will help you select a load that is not too large. Make sure total wattage of all electrical loads does not exceed 3000 watts (model 3ZC06B) or 5000 watts (model 4W315B). Electric motors present a special problem when figuring load. Read Step 3 carefully.

1. Make two lists of items you want powered by generator. List all motors and motor powered appliances in one. List all lights, small appliances, etc. in the other. For standby service to home or building, only include items you must power.
2. Enter running watts of each item except motors. The light bulb or appliance nameplate lists its wattage. Remember, 1KW = 1000 watts. NOTE: The nameplate may not list wattage. It may only list volts and amps. The formula for finding wattage is: Volts x Amps = Watts. For example: An appliance nameplate states 3 amps at 120 volts. 3 amps x 120 volts = 360 watts.
3. Electric motors present a special problem. They require up to 3-times their rated wattage to start. Chart 2, page 11, shows starting watts (maximum volt-amperes [VA]) for different size motors. For example: an electric motor nameplate states 5 amps at 120 volts. 5 amps x 120 volts = 600 watts running. Multiply this figure by 3. This will show the starting watts (maximum VA) needed. 600 watts x 3 = 1800 watts (VA) to start. When figuring the generator load for motors, you must use the starting watts (maximum VA) figure. Do not use the running watts figure. NOTE: Some motors require nearly the same wattage to run as to start. These items include saws, drills, hair dryers, and food mixers. See Chart 1, page 11 for typical appliance wattage examples.
4. Add watts and starting watts (maximum VA) of all items. This total must not be larger than 3000 watts (model 3ZC06B) or 5000 watts (model 4W315B). It is a good idea to have up to 25% extra capacity for future needs or extra equipment.

Models 3ZC06B and 4W315B

TYPICAL ELECTRIC APPLIANCE WATTAGES

CHART 1

Equipment	Running Watts	Starting Watts (Max.VA)
Light bulb (100W)	100	100
Radio	150	150
Fan	200	600
Television	400	400
Furnace fan—1/3 HP with blower	600	1800
Vacuum cleaner	600	750
Sump pump—1/3 HP	700	2100
Refrigerator/freezer	800	2400
6" Circular saw	800	1000
Floodlight	1000	1000
1/2" Drill	1000	1250
Toaster/coffeemaker	1200	1200
Skillet	1200	1200
14" Chain saw	1200	1500
Water well pump—1/2 HP	1000	3000
Hot plate/range (per burner)	1500	1500
10" Table saw	2000	6000
Water heater (storage-type)	5000	5000

CHART 2

Motor HP Rating	Approximate Running Watts	Approximate Starting Watts* (Max. VA) Universal Motors (small appliance)	Approximate Starting Watts* (Max. VA) Repulsion Induction Motors	Approximate Starting Watts* (Max. VA) Capacitor Motors	Approximate Starting Watts* (Max. VA) Split Phase Motors
1/8	275	400	600	850	1200
1/4	400	500	850	1050	1700
1/3	450	600	975	1350	1950
1/2	600	750	1300	1800	2600
3/4	850	1000	1900	2600	†
1	1000	1250	2300	3000	†
1 1/2	1600	1750	3200	4200	†
2	2000	2350	3900	5100	†
3	3000	†	5200	6800	†

* Always use starting watts (maximum VA), not running watts, when figuring correct electrical load.

† Motors of higher horsepower are not generally used.

Note: Please check with appliance manufacturer for maximum wattage required.

Dayton® Diesel Electric Generator

Operation

HIGH AND LOW TEMPERATURE OPERATION

Air temperature affects generator output. Output drops 1% for each 10° temperature rise above 60° F. Very low temperatures may make the engine hard to start. See engine owner's manual for more information.

GENERAL INFORMATION

This generator is not large enough to power your entire home. Do not connect generator to any existing electrical circuits. Plug items directly into generator receptacles. Do not exceed amperage rating of receptacles. Only use grounded cords.

⚠ DANGER ***Use only in well-vented areas. Make sure area has plenty of free-moving, fresh, outside air. Never run generator in an enclosed or confined area. Never run generator inside occupied building. engine exhaust contains poisonous carbon monoxide gas. Overexposure will cause loss of consciousness and will lead to death.***

⚠WARNING ***Never connect generator to any existing electrical circuits. The generator output will back-feed into the utility power line. This may electrocute a power company line repair person. Also, if generator is powering electrical circuits, the chance of an electrical fire exists.***

NOTE: We supply the engine owner's manual with generator. Refer to that manual for questions concerning engine operation.

USING RECEPTACLE

NOTE: Do not exceed amperage rating of receptacles. Exceeding rating will trip receptacle circuit breaker.

Use receptacles properly. Improper use could damage generator. Use only grounded extension cords. Power only grounded or double-insulated items. Do not overload receptacles. These generators have the following receptacles (see Figure 16):

- 120V, 15-amp duplex receptacle
- 120V, 30-amp twist-lock receptacle
- 120/240V, 20-amp twist-lock receptacle

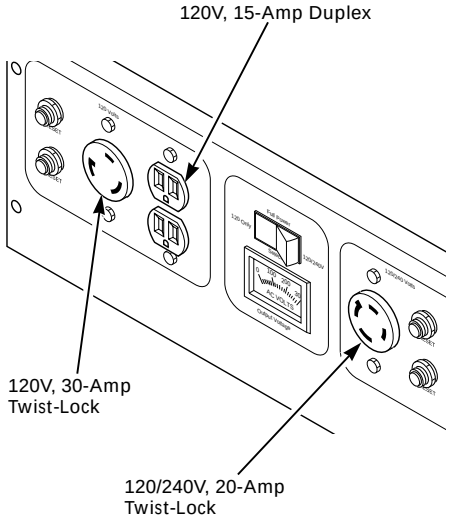


Figure 16 – Receptacle Locations

POWER CORD AND PLUG REQUIREMENTS

120V, 30-amp twist-lock receptacle

- NEMA L5-30P plug
- Three-wire, 30-amp cord

120/240V, 20-amp twist-lock receptacle

- NEMA L14-20P (20-amp) plug
- Four-wire, 20-amp cord

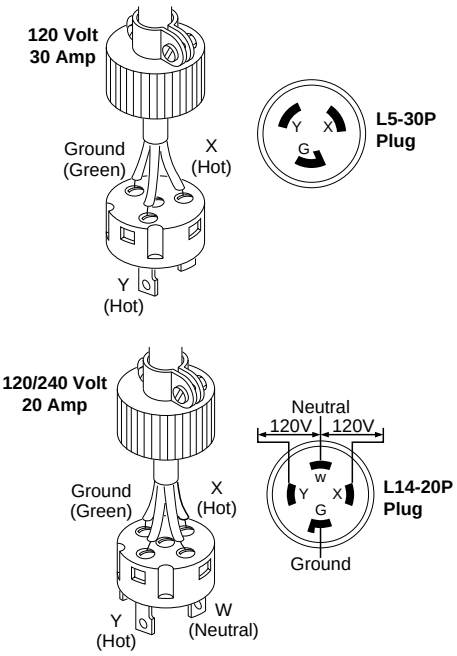


Figure 17 – Cord and Plug Configurations

PRESTART

Operate generator on a firm, dry, and clean surface. The surface must be level. Protect generator from heavy dust, sand, dirt, rain, or snow. Do not locate generator near standing water and snow. Make sure area is well-vented.

⚠WARNING ***Only responsible adults should use generator. Never let anyone operate generator without proper instructions.***

NOTE: If oil level is too low, oil alert system will keep engine from starting (Model 4W315B only – see *Oil Alert System*, page 5). Make sure oil level is full before starting. See *Engine Oil*, page 8.

Before starting the engine, disconnect all electric loads from generator.

Models 3ZC06B and 4W315B

Operation (continued)

You may need to bleed fuel line to remove trapped air

- if starting engine for first time
- if starting engine after allowing generator to run out of fuel

Follow the directions below to bleed fuel line.

BLEEDING FUEL LINE

1. Loosen fuel line clamp and remove fuel line from engine. Place open end of fuel line over a clean container to catch any fuel spilled in step 3, below.
2. Move fuel valve lever to the "O" (open) position (see Figure 18).
3. Allow air to bleed from line. When fuel exits fuel line in a steady stream, reattach fuel line to engine.
4. Add spilled fuel back into fuel tank.

STARTING

IMPORTANT: The engine speed is preset. The throttle is locked in preset position. Do not adjust throttle. Preset position lets engine run at 3600 RPM under load. The engine must maintain 3600 RPM for generator to create correct voltage. Running engine at lower speeds will damage generator and powered items.

IMPORTANT: Never start generator with electrical loads connected. Start engine before adding electrical loads.

1. Make sure fuel tank is full. See *Fuel*, page 8 for fuel information.
2. Move fuel valve lever to the "O" (open) position (see Figure 18).

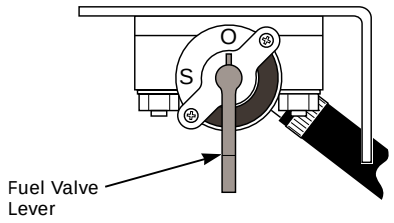


Figure 18 - Fuel Valve Lever In "O" (open) Position

3. For Model 3ZC06B: Push engine run/stop knob down to the RUN position (see Figure 19). Turn engine run/stop knob clockwise to tighten. Tighten firmly.

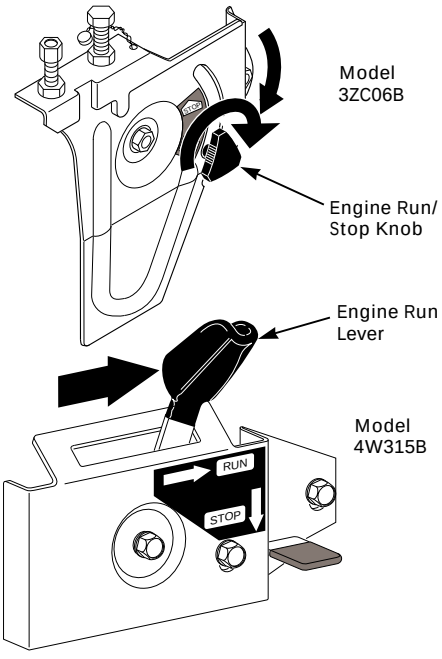


Figure 19 - Engine Run/Stop Knob (Model 3ZC06B) and Engine Run Lever (Model 4W315B)

⚠ CAUTION ***You must fully move engine run/stop knob to the RUN position to run engine at 3600 RPM. Do not run engine at lower speeds. Running engine at lower speeds will damage generator and powered items.***

For Model 4W315B: Move engine run lever to the RUN position (see Figure 19).

4. Start the engine.
   a. Electric Starter (Model 4W315B only)
      (1) Slowly pull starter rope until you feel strong resistance. Gently return starter rope to engine.
      (2) Push decompression lever all the way down (see Figure 20). Decompression lever will stay in this position until you turn starting key.

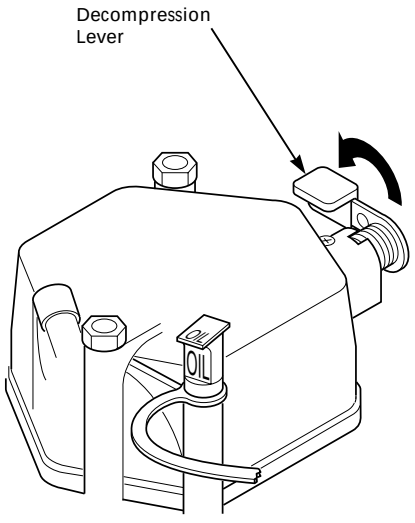


Figure 20 - Decompression Lever

Dayton® Diesel Electric Generator

Operation (continued)

(3) Turn the starting key clockwise to the START position (see Figure 21). Hold it there until engine starts.

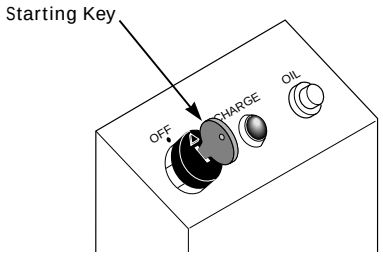


Figure 21 - Starting Key (Model 4W315B only)

(4) When engine starts, release key.

IMPORTANT: Do not use electric starter more than ten seconds. Starter motor damage may occur. If engine fails to start, release the key and wait 15 seconds. After 15 seconds, try starting again.

In cold weather, your engine may be hard to start. If so, remove the rubber plug on the rocker arm cover (see Figure 22). Add 2 cc of engine oil in hole. Replace rubber plug. Repeat starting procedure.

⚠WARNING ***Never use gasoline, paint thinner, or any other flammable liquid as a starting aid. An explosion may occur.***

⚠ CAUTION ***Keep rubber plug on rocker arm in place when not adding oil for starting. Rain, dirt, and other debris may enter the engine. This can damage the engine.***

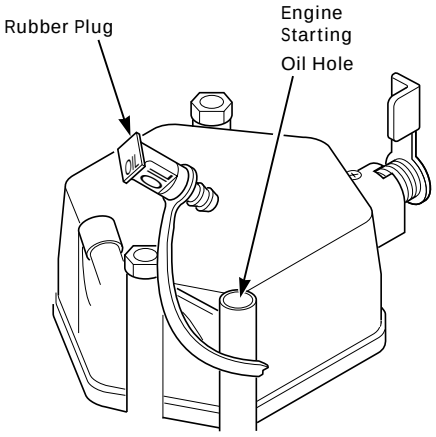


Figure 22 - Rubber Plug On Rocker Arm Cover

b. Recoil Starter (Models 3ZC06B and 4W315B)

(1) Slowly pull starter rope until you feel strong resistance. Gently return starter rope to engine.

(2) Push decompression lever all the way down (see Figure 23). Decompression lever will stay in this position until you pull starter rope.

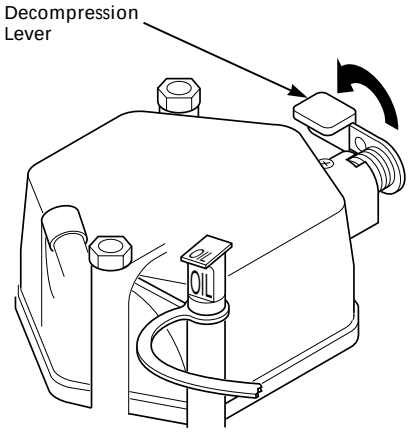


Figure 23 - Decompression Lever

(3) Firmly grasp starter grip with both hands. Remove slack from starter rope by lightly pulling starter grip.

(4) To start engine, pull starter rope briskly. You must pull the starter rope all the way out. If not, the engine will not start.

IMPORTANT: Do not let starter grip snap back against engine. Return it gently. This will prevent damage to starter.

In cold weather, your engine may be hard to start. If so, remove the rubber plug on the rocker arm cover (see Figure 22). Add 2 cc of engine oil in hole. Replace rubber plug. Repeat starting procedure.

⚠WARNING ***Never use gasoline, paint thinner, or any other flammable liquid as a starting aid. An explosion may occur.***

⚠ CAUTION ***Keep rubber plug on rocker arm in place when not adding oil for starting. Rain, dirt, and other debris may enter the engine. This can damage the engine.***

If engine does not start, repeat steps under *b. Recoil Starter* on this page.

HIGH ALTITUDE OPERATION

This generator will not perform well at high altitudes without proper adjustment. Contact a Yanmar dealer for adjustment information.

ADDING ELECTRICAL LOADS

IMPORTANT: Do not overload generator. Make sure total wattage of all electrical loads does not exceed rated wattage of generator. Overloading may shorten generator life. It could also cause internal damage to generator. Overloading will trip circuit breaker.

Models 3ZC06B and 4W315B

Operation (continued)

IMPORTANT: Keep full power selector switch in the 120 VOLT ONLY position if only powering 120V items. Only move switch to 120/240 VOLT position if powering 240V items.

1. Check items to be powered. Their nameplate lists their wattage ratings.

   NOTE: The wattage ratings for some electrical motors are misleading. They may require up to 3-times their rated wattage to start. You must figure total electrical load wattage. Make sure total wattage of all electrical loads does not exceed rated wattage of generator. See *Determining Electrical Load For Generator,* page 10.

2. Start engine. Let engine reach full speed.

3. Connect electrical loads one at a time. If the load consists of electric motors, start them first. Always start the largest first. Start each motor individually.

DISCONNECTING ELECTRIC LOADS

Remove electrical loads one at a time. Remove voltage sensitive items first. Voltage sensitive items include TVs, VCRs, and other home electronic items.

STOPPING ENGINE

Follow the steps below to stop engine.

1. Remove all electrical loads from generator (see *Disconnecting Electrical Loads*, above). Remove electrical loads one at a time.

2. Let engine run for two or three minutes after removing electrical loads. This lets engine cool slightly.

3. For Model 3ZC06B: Turn engine run/stop knob counterclockwise to release. The run/stop knob will return to the STOP position automatically (see Figure 24).

   For Model 4W315B: Push down engine stop lever (see Figure 24). This releases engine run lever and stops engine. Do not stop engine with the decompression lever.

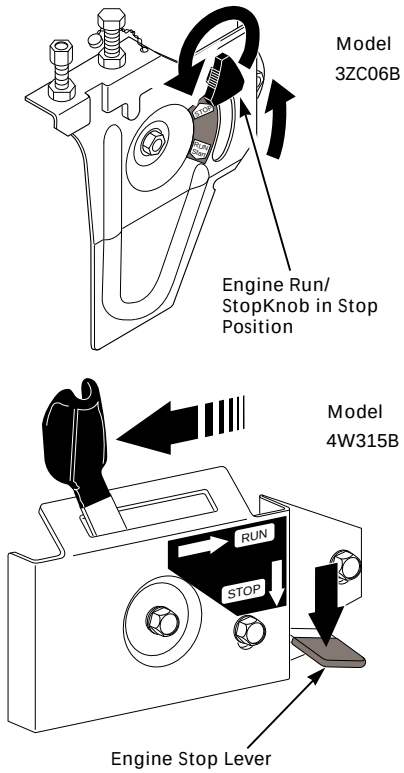


Figure 24 - Releasing Engine Run/Stop Knob (Model 3ZC06B) and Pushing Down Engine Stop Lever (Model 4W315B)

4. For Model 4W315B: Turn the starter key to the OFF position.

5. Turn fuel valve lever off. Do this by moving valve lever to the "S" position (see Figure 25).

6. Slowly pull starter rope until you feel strong resistance. Gently return starter rope to engine. This action closes the intake and exhaust valves. This prevents rust from forming while not using engine.

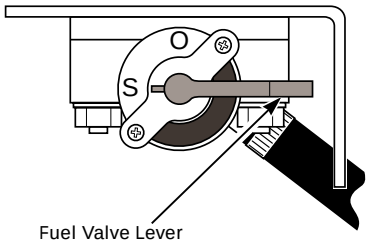


Figure 25 - Fuel Valve Lever In "S" Position

Maintenance and Repairs

⚠WARNING ***Only a qualified electrical service person should service and repair the alternator on this generator. Use only factory approved replacement parts.***

⚠ CAUTION ***You must always run the engine at full speed. Do not run engine at lower speeds. At full speed, the engine runs at 3600 RPM under load. The engine must maintain 3600 RPM for generator to create correct voltage. Running engine at lower speeds will damage generator and powered items.***

⚠ CAUTION ***Shut off generator before performing maintenance.***

IMPORTANT: Keep generator level when servicing. Never turn generator upside down or stand it on end to service.

NOTE: We supply the engine owner's manual with generator. Refer to that manual for questions concerning engine maintenance and repairs.

Dayton® Diesel Electric Generator

Maintenance and Repairs (continued)

Non-engine parts require little maintenance. Keep generator clean. Use a damp cloth to clean outside surfaces. Never use water to clean generator. Water can cause damage to internal parts. Use vacuum to clean air inlet and outlet louvers of alternator.

SERVICING THE ENGINE

For Yanmar engine replacement parts, contact Parts Company of America at 1-800-323-0620.

Yanmar engine servicing should be handled by your nearest authorized Yanmar engine service firm. Contact Yanmar at 1-714-630-9415 for nearest authorized Yanmar engine service firm.

ENGINE MAINTENANCE

Periodic checks and maintenance are very important for keeping the engine in good condition and durable. The chart on page 18 indicates which checks to make and when to make them. The mark "•" indicates that special tools and skills are required. Items marked "•" should be serviced by an authorized Yanmar dealer, unless the owner has the proper tools and is mechanically proficient.

Consult your Yanmar dealer.

⚠WARNING ***Shut off the engine before performing any maintenance. If the engine must be run, make sure the area is well ventilated. The exhaust contains poisonous carbon monoxide gas.***

⚠ CAUTION ***After the engine has been used, clean the engine immediately with a cloth to prevent corrosion and to remove sediment.***

⚠ CAUTION ***Only use genuine Yanmar parts. The use of replacement parts which are not of equivalent quality may damage the engine.***

HOW TO CHANGE YOUR ENGINE OIL

Remove the oil filler cap. Remove the drain plug and drain the old oil while the engine is still warm. The plug is located on the bottom of the cylinder block. Tighten the drain plug and refill with the recommended oil. (See the section under *Preparations for starting* in the engine owner's manual.)

CLEANING THE OIL FILTER

Loosen the fixing bolt and then pull out the oil filter. Clean oil filter every six months or 500 hours operation.

CHANGING THE AIR CLEANER ELEMENT

Do not wash the air cleaner element with detergent because this is a wet-type element. Change air cleaner element every six months or 500 hours operation (or earlier if dirty).

See the section for changing the air cleaner element under *Preparations for starting* in the engine owner's manual.

⚠ CAUTION ***Never run the engine without the air cleaner element or with a defective element.***

Note: A clogged element hinders the flow of air to the combustion chamber. This reduces engine output, increases lube oil and fuel oil consumption and makes starting difficult. Make sure you clean your element regularly.

CLEANING AND REPLACING THE FUEL FILTER

The fuel filter also has to be cleaned regularly to insure maximum engine output. Clean fuel filter every six months or 500 hours operation. Replace fuel filter every year or 1000 hours operation.

1. Drain the fuel oil from the fuel tank.
2. loosen the nuts of the fuel cock and pull out the filter from the fuel tank filler port. Wash the filter thoroughly with diesel fuel.

CLEANING THE SPARK ARRESTER

⚠WARNING ***If the engine has been running, the muffler and the spark arrester will be very hot. Allow these to cool before proceeding.***

Remove the lock nut, end cap and diffuser discs and clean off the carbon deposits. Clean spark arrester every three months or 100 hours operation (or earlier if dirty).

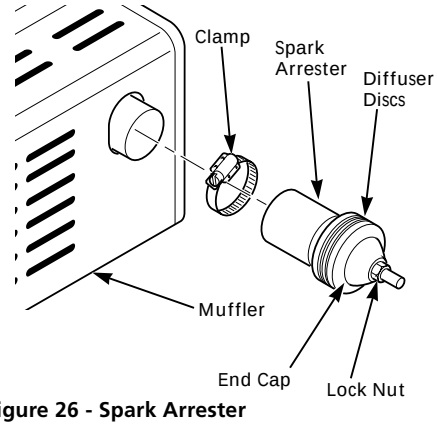


Figure 26 - Spark Arrester

⚠ CAUTION ***A clogged spark arrester hinders the flow of exhaust gas. This reduces engine output, increases fuel consumption and makes starting difficult. Make sure you clean your spark arrester regularly.***

TIGHTEN CYLINDER HEAD BOLTS

Tightening the cylinder head bolts requires a special tool. Don't try it yourself. Consult your Yanmar dealer.

Models 3ZC06B and 4W315B

Maintenance and Repairs (continued)

CHECKING THE INJECTION NOZZLE, INJECTION PUMP, ETC.

- Adjusting the valve head clearance for the intake and exhaust valves.
- Lapping of intake and exhaust valves.
- Replacing piston ring.

All these require special tools and skills. Consult your Yanmar dealer.

⚠WARNING ***Do not perform the injection nozzle test near an open fire or any other kind of fire. The fuel spray may ignite. Do not expose bare skin to the fuel spray. The fuel may penetrate the skin and cause injury to the body. Always keep your body away from the nozzle.***

CHECKING AND REPLENISHING BATTERY FLUID AND CHARGING THE BATTERY (MODEL 4W315B ONLY)

Battery fluid will be lost through continuous charging and discharging.

⚠WARNING ***The battery electrolyte contains sulfuric acid. Protect your eyes, skin, and clothing. In case of contact, flush thoroughly with water and get prompt medical attention, especially if your eyes are affected.***

⚠WARNING ***Batteries generate hydrogen gas, which can be highly explosive. Do not smoke or allow flames or sparks near the battery, especially during charging.***

Note: Much more fluid is lost during summer than in winter.

Before starting, check for physical damage to the battery and also the electrolyte levels, and replenish with distilled water up to the upper mark if necessary. When actual damage is discovered, replace the battery. Check battery fluid monthly.

⚠WARNING ***Before charging, remove the cap from each cell of the battery. Charge the battery in a place where there is plenty of ventilation. Discontinue charging if the electrolyte temperature exceeds 45° C (117° F).***

⚠ CAUTION ***Do not charge the battery with the battery cable still connected. The diodes will be damaged by the high voltage.***

⚠ CAUTION ***Connect the (+) lead of the charger to the (+) terminal of the battery, and the (–) lead to the (–) terminal. Reversed polarity will damage the charger rectifier or the battery.***

Storage

⚠WARNING ***Remove all fuel from fuel tank before storing generator. Store fuel in approved container. Store fuel in a well-vented area free of open flames or sparks.***

⚠WARNING ***The muffler becomes very hot during operation. The muffler remains hot for a while after shutdown. Let engine cool before storing.***

IMPORTANT: Keep generator level while in storage. Never store generator upside down or standing on end.

Cover and store generator in a clean, dry place. Do not expose generator to extreme high or low temperatures during storage.

ENGINE STORAGE

If storing your engine for long periods, make the following preparations.

1. Operate the engine for about 3 minutes and then stop.
2. Stop the engine. Drain the engine lube oil while the engine is still warm and fill with new oil.
3. Remove the rubber plug on the rocker arm cover and add about 2cc of lube oil. Put the plug back in place (see Figure 27).

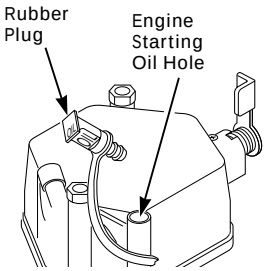


Figure 27 - Rubber Plug On Rocker Arm Cover

4. Recoil starting

   Push the decompression lever down (non-compression position, see Figure 28) and hold it while you pull the recoil starter 2 or 3 times. (Do not start the engine.)

   Electric starting

   Push the decompression lever down (non-compression position, see Figure 28) and hold it. With key in START position, turn engine for 2 to 3 seconds. (Do not start the engine.)

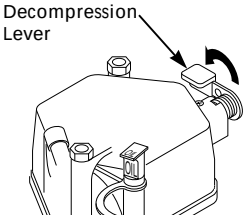


Figure 28 - Decompression Lever

5. Pull the decompression lever up. Pull the recoil starter slowly. Stop when it feels tight. This closes the intake and exhaust valves (in compression position) and helps prevent rust from forming.
6. Wipe the oil and dirt from the engine and store in a dry place.

Dayton® Diesel Electric Generator

Item	Daily Check	Service Monthly	Service First Month or 20 Hrs.	Service Every 3 Months or 100 Hrs.	Service Every 6 Months or 500 Hrs.	Service Every Year or 1000 Hrs.
Check and replenish fuel oil	○					
Drain fuel from fuel tank		○				
Check and replenish lube oil	○					
Check for oil leakage	○					
Check and tighten engine parts	○					
Check and tighten engine head bolts					●	
Change lube oil (first time)			○			
Change lube oil (each time after first)				○		
Clean oil filter (replace if needed)					○	
Replace air cleaner element (Service more frequently when used in dusty areas)					○	
Clean fuel filter					○	
Replace fuel filter						●
Clean spark arrester				○		
Check fuel injection pump					●	
Check fuel injection nozzle					●	
Check fuel piping (replace if needed)					●	
Adjust valve head clearance for intake and exhaust valves (first time at 20 hrs)			●			
Adjust valve head clearance for intake and exhaust valves (each time after first)					●	
Lap intake and exhaust valves						●
Replace piston rings						●
Check battery fluid		○				

● Special tools and skills required

○ No special tools or skills required

Models 3ZC06B and 4W315B

Wiring Diagrams

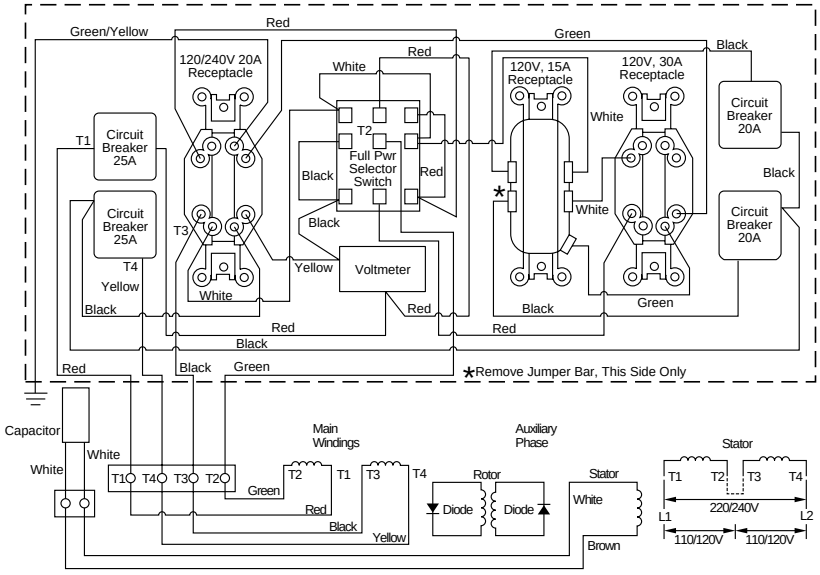


Figure 29 - Alternator Wiring Diagram

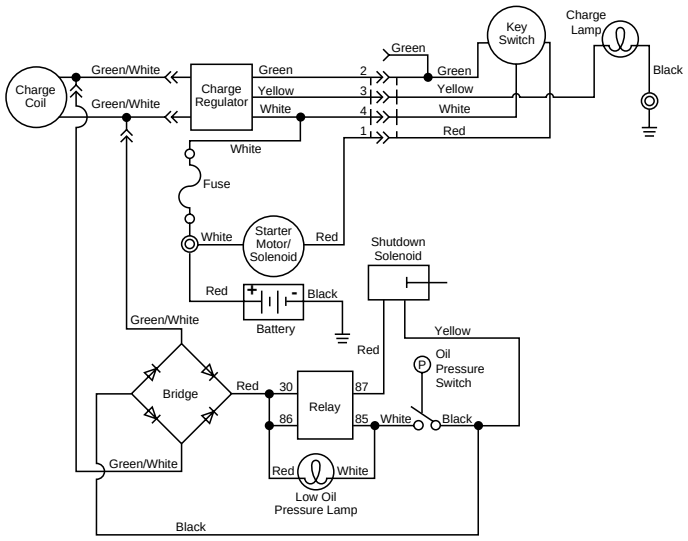


Figure 30 - Engine Wiring Diagram (Model 4W315B only)

For Replacement Parts, call 1-800-323-0620

Please provide following information:
-Model number
-Serial number (if any)
-Part descriptions and number as shown in parts list

Address parts correspondence to:
Parts Company of America
1657 Shermer Road
Northbrook, IL 60062-5362

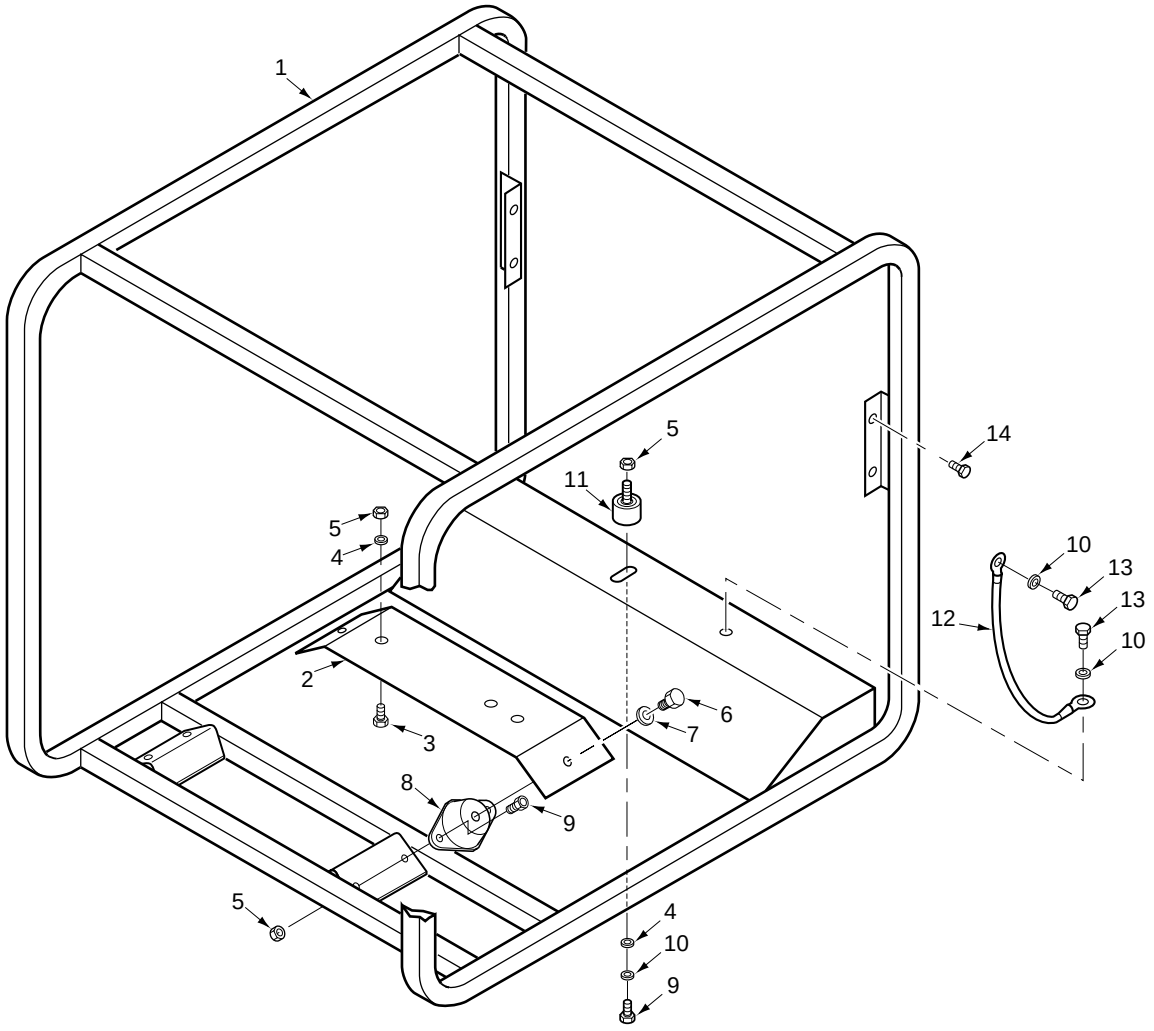


Figure 31 – Replacement Parts Illustration for Model 3ZC06B Roll Cage

Replacement Parts List

Model 3ZC06B Roll Cage

Reference Number	Description	Part No. For Model 3ZC06B	Quantity
1	Roll cage	100478-01	1
2	Spreader	099945-01	1
3	5/16-18 x 1 1/2" Bolt	04110002	2
4	5/16" Washer	WP-5C	5
5	5/16-18 Nut	NEC-5C	7
6	1/2-20 x 1" Screw	26302006	2
7	1/2" Lockwasher	WLI-8	2
8	Shock mounts	17529000	2
9	5/16-18 x 3/4" Bolt	26007004	5
10	5/16" Washer	WLE-5	3
11	Shock mount	26020000	1
12	Ground strap	14138000	1
13	1/4-20 x 1/2" Screw	M10908-74	2
14	#8-18 x 1/2" Sems screw	100410-01	4
	Safety information decal	099947-01	1
	Operation decal	100473-01	1

( ) Not shown.

For Replacement Parts, call 1-800-323-0620

Please provide following information:
-Model number
-Serial number (if any)
-Part descriptions and number as shown in parts list

Address parts correspondence to:
Parts Company of America
1657 Shermer Road
Northbrook, IL 60062-5362

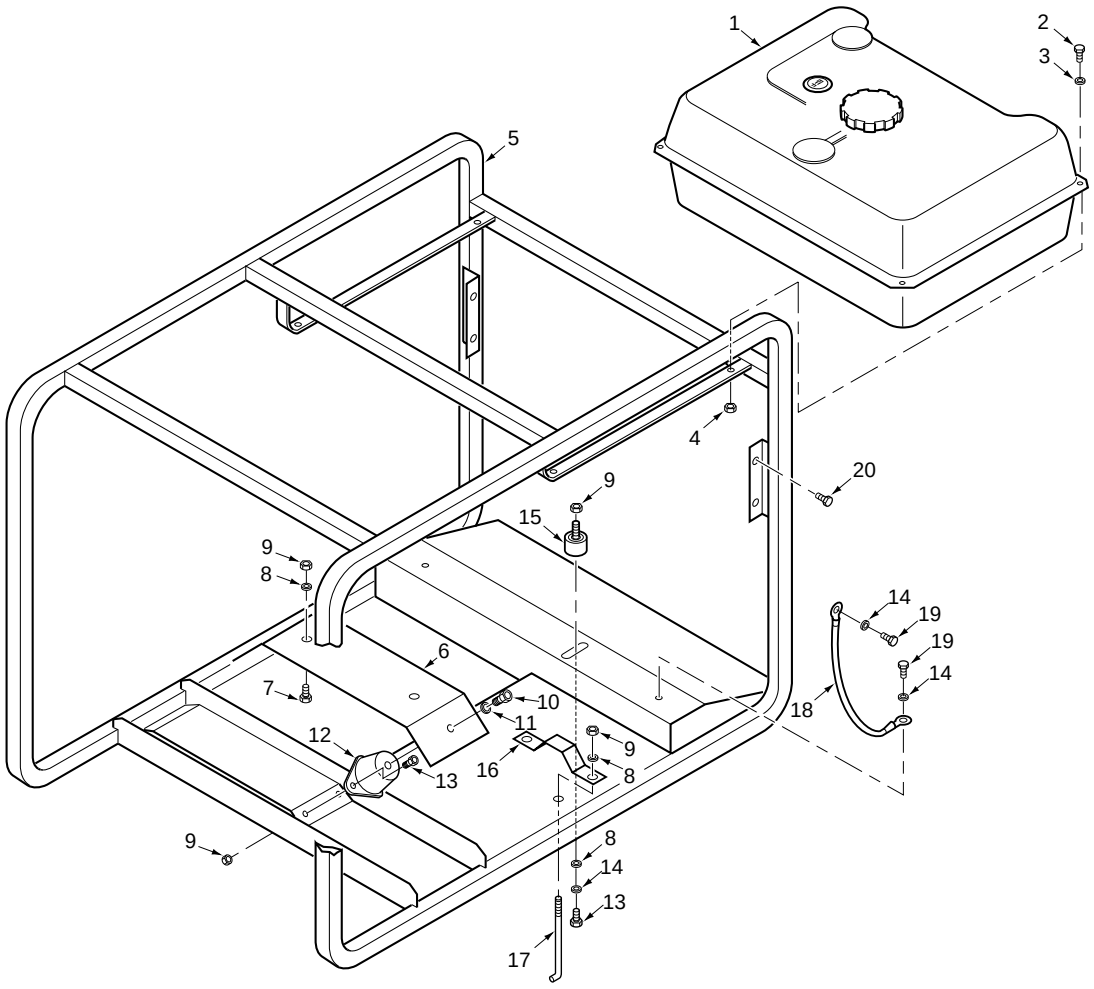


Figure 32 – Replacement Parts Illustration for Model 4W315B Fuel Tank and Roll Cage

Replacement Parts List

Model 4W315B Fuel Tank and Roll Cage

Reference Number	Description	Part No. For Model 4W315B	Quantity
1	Fuel tank assembly	099935-01	1
2	1/4-20 x 3/4" Screw	HC4-6C	4
3	1/4" Washer	WP-4C	4
4	1/4-20 Nut	NTC-4C	4
5	Roll cage	099943-01	1
6	Spreader	099945-01	1
7	5/16-18 x 1 1/2" Bolt	04110002	2
8	5/16" Washer	WP-5C	5
9	5/16-18 Nut	NEC-5C	9
10	1/2-20 x 1" Screw	26302006	2
11	1/2" Lockwasher	WLI-8	2
12	Shock mounts	17529000	2
13	5/16-18 x 3/4" Bolt	26007004	5
14	5/16" Washer	WLE-5	3
15	Shock mount	26020000	1
16	Battery bracket	099749-01	1
17	Hook bolt	099750-01	2
18	Ground strap	14138000	1
19	1/4-20 x 1/2" Screw	M10908-74	2
20	#8-18 x 1/2" Sems screw	100410-01	4
	Safety information decal	099947-01	1
	Operation decal	099948-01	1
	Battery cable (positive)	099873-01	1
	Battery cable (negative)	099873-02	1

( ) Not shown.

For Replacement Parts, call 1-800-323-0620

Please provide following information:
-Model number
-Serial number (if any)
-Part descriptions and number as shown in parts list

Address parts correspondence to:
Parts Company of America
1657 Shermer Road
Northbrook, IL 60062-5362

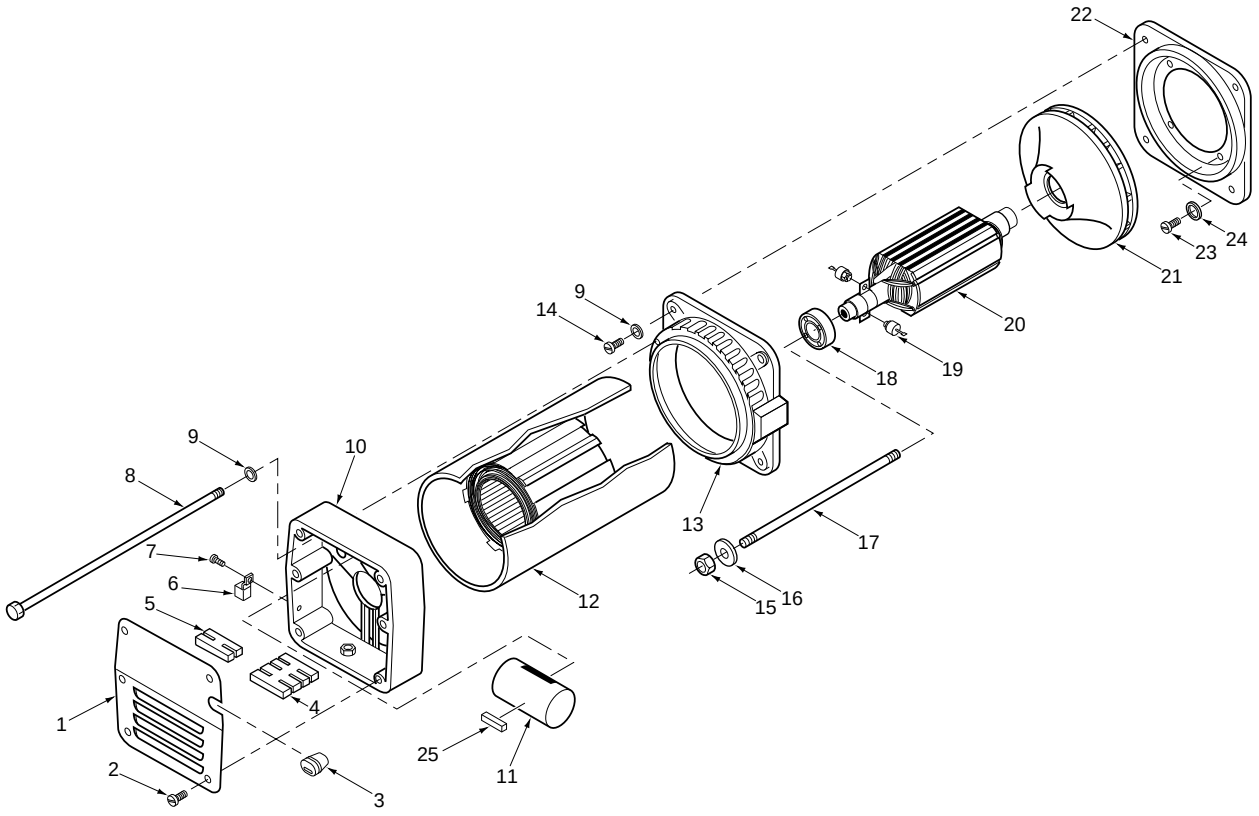


Figure 33 – Replacement Parts Illustration for Models 3ZC06B and 4W315B Alternator Assembly

Replacement Parts List

Models 3ZC06B and 4W315B Alternator Assembly

Reference Number	Description	Part No. For Models: Model 3ZC06B	Model 4W315B	Quantity
1	End cover	099844-01	099844-01	1
2	M5 x 13 Screw	099701-01	099701-01	6
3	Bushing	099760-01	099760-01	1
4	Terminal block (4-block)	099863-01	099863-01	1
5	Terminal block (2-block)	099863-02	099863-02	1
6	Ground lug	17587000	17587000	1
7	#10-16 x 3/8" Screw	M11084-26	M11084-26	1
8	Stator bolt	099847-01	099847-02	4
9	5/16" Lockwasher	WLE-5	WLE-5	4
10	Bearing housing	099843-01	099843-01	1
11	Capacitor	27004002S	27005003S	1
12	Stator	099840-02S	099840-03S	1
13	Fan bracket	27003002	27003002	1
14	M8 x 20 Screw	27003015	27003015	4
15	Rotor nut	27001010	27001010	1
16	Washer	27003013	27003013	1
17	Draw bolt	099842-01	099842-02	1
18	Bearing	27003003	27003003	1
19	Diode	27003012S	27003012S	2
20	Rotor	099839-02S	099839-03	1
21	Fan	27003008	27003008	1
22	Engine flange	27003007	27003007	1
23	3/8-16 x 5/8" Bolt	26322006	26322006	4
24	3/8" Lockwasher	WLE-6	WLE-6	4
25	Foam pad	099892-01	099892-01	1
†	Alternator assembly complete	099723-01	099723-02	1

(†) Includes reference numbers 1 through 25.

For Replacement Parts, call 1-800-323-0620

Please provide following information:
-Model number
-Serial number (if any)
-Part descriptions and number as shown in parts list

Address parts correspondence to:
Parts Company of America
1657 Shermer Road
Northbrook, IL 60062-5362

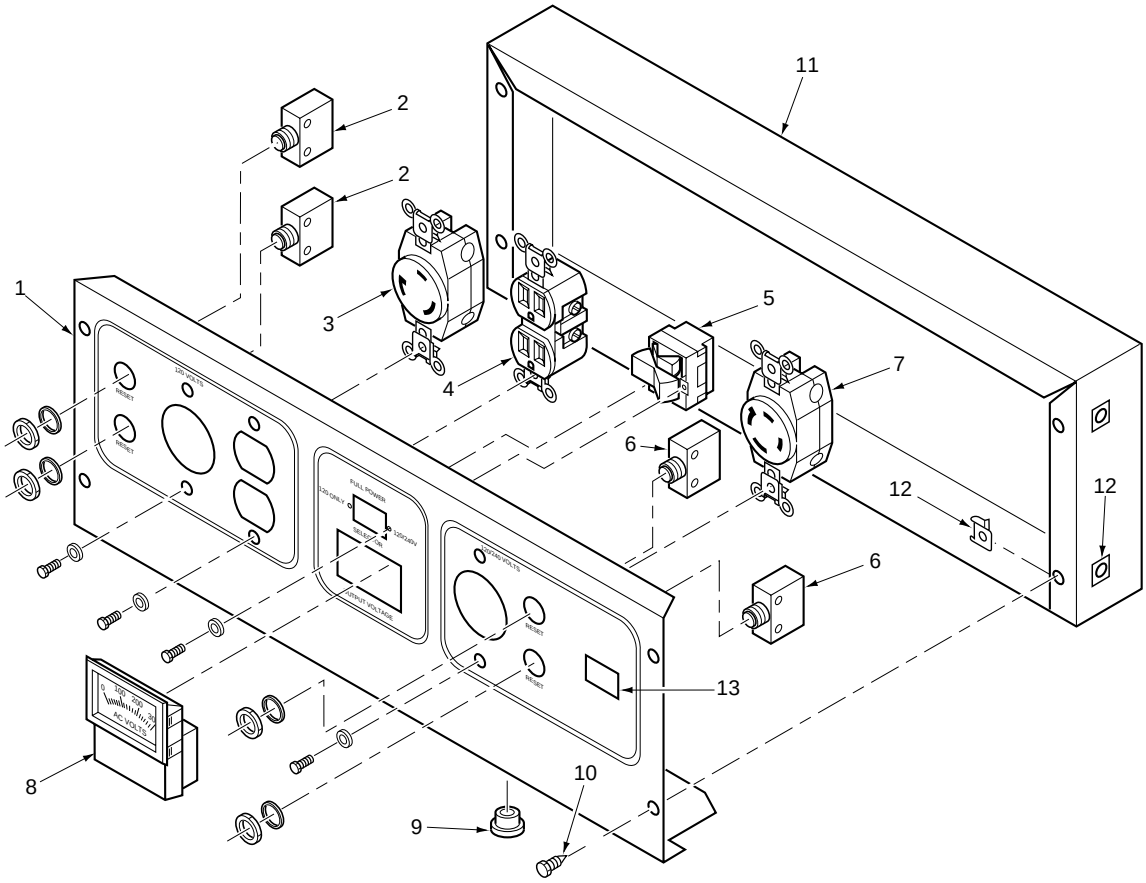


Figure 34 – Replacement Parts Illustration for Models 3ZC06B and 4W315B Control Panel

Replacement Parts List

Models 3ZC06B and 4W315B Control Panel

Reference Number	Description	Part No. For Models: Model 3ZC06B	Model 4W315B	Quantity
1	Control panel	099775-10	099775-05	1
2	20 Amp Circuit breaker *	22616009	22616009	2
3	120V, 30A Twist-lock receptacle *	099833-01	099833-01	1
4	120V, 15A Duplex receptacle *	099836-01	099836-01	1
5	Full power selector switch *	099956-01	099956-01	1
6	20 Amp Circuit breaker *	22616009	—	2
	25 Amp Circuit breaker *	—	22616011	2
7	120/240V, 20A Twist-lock receptacle *	099834-01	099834-01	1
8	Voltmeter	099748-01	099748-01	1
9	Bushing	099760-01	099760-01	1
10	#8-18 x 1/2" Sems screw	100410-01	100410-01	4
11	Control box	100149-01	100149-01	1
12	U-nut	22261000	22261000	8
13	Switch Plug	099997-01	099997-01	1
	Panel schematic decal	099872-01	099872-01	1

( ) Not shown.

(*) Includes fastening hardware.

For Replacement Parts, call 1-800-323-0620

Please provide following information:
-Model number
-Serial number (if any)
-Part descriptions and number as shown in parts list

Address parts correspondence to:
Parts Company of America
1657 Shermer Road
Northbrook, IL 60062-5362

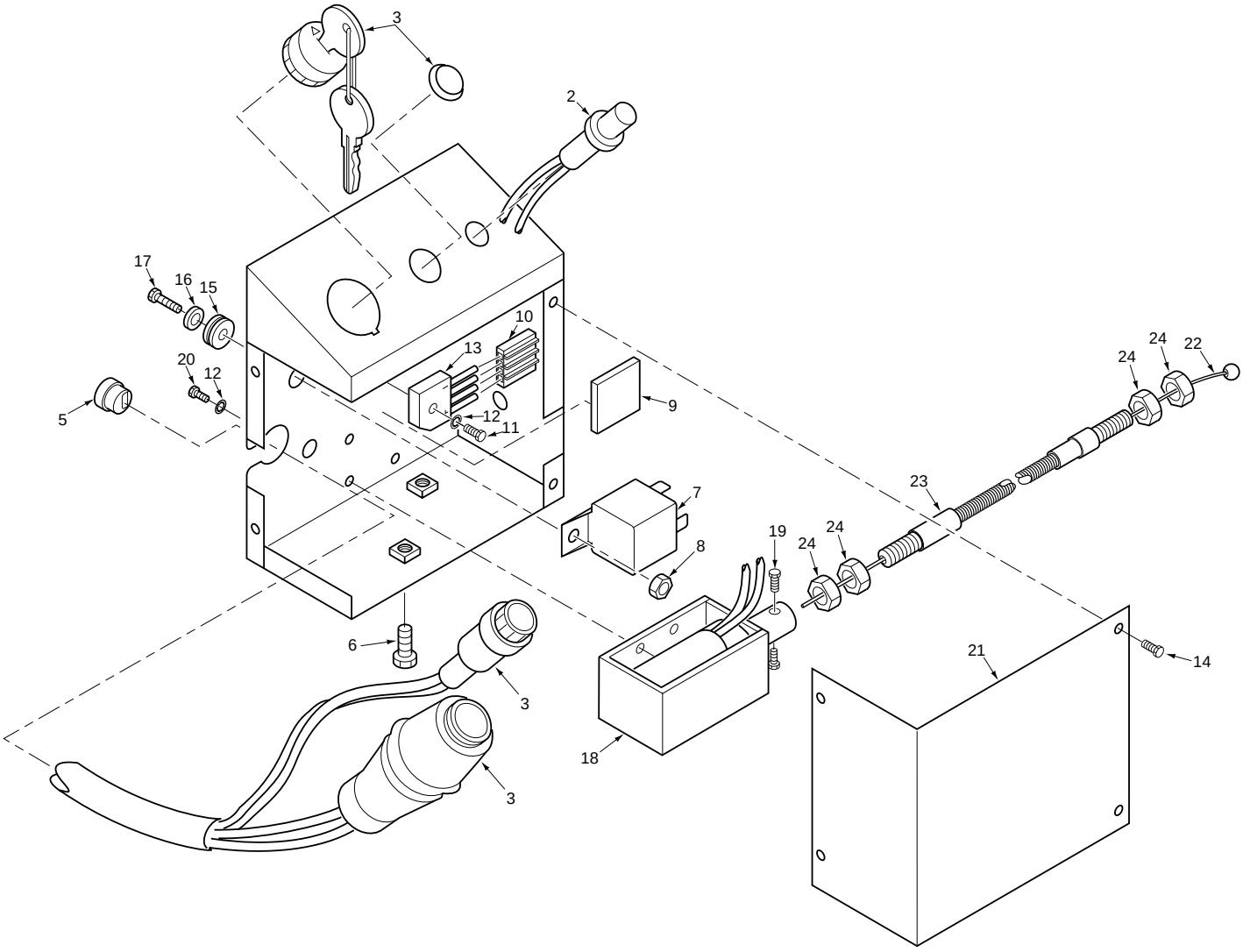


Figure 35 – Replacement Parts Illustration for Model 4W315B Switch Control Box

Replacement Parts List

Model 4W315B Switch Control Box

Reference Number	Description	Part No. For Model: Model 4W315B	Quantity
1	Switch control box	101037-01	1
2	Low oil light	22721000	1
3	Key switch, lamp, and harness assembly	099936-01	1
4	#8-18x 1/2" Sems screw	100410-01	4
5	Strain relief bushing	099760-01	1
6	1/4-20 x 5/8" Hex Head Sems	101040-01	2
7	Relay	26498000	1
8	#10-32 Hex locknut	NTF-3C	1
9	Adhesive-backed PVC foam	RN12000100	1
10	Connector	24477004	1
11	#6-32 x 1/2" Hex tapping screw	M10908-3	1
12	#6 Internal-tooth lockwasher	WLI-1C	5
13	Full bridge	26509000	1
14	#8-32 x 3/8" Screw	26002006	4
15	Grommet	15020000	1
16	#10 Flat washer	WP-3C	1
17	#10-32 x 3/4" Hex-head screw	26499000	1
18	Solenoid	26490000	1
19	M4 x 8 Hex-head screw	26494000	2
20	M3 x 8 Hex-head screw	26492000	4
21	Control Box Cover	101038-01	1
22	Cable	101036-01	1
23	Conduit	101035-01	1
24	1/4-28 Keps Nut	101039-01	4
	Wire Nut	101042-01	1

( ) Not shown.

Dayton® Diesel Electric Generator

Troubleshooting Chart

NOTE: See engine owner's manual for engine troubleshooting.

⚠WARNING ***Only a qualified electrical service person should service and repair generator. Use only factory approved replacement parts.***

Symptom	Possible Cause(s)	Corrective Action
No voltage when starting generator with no electrical load	1. Defective capacitor 2. Winding short circuit or loose connections 3. Defective rotor diode 4. Loss of residual magnetism	1. Replace capacitor 2. Check resistance of coils (see *Electrical Component Specifications*, page 2) 3. Replace both diodes on rotor 4. Apply 12-volt battery to capacitor terminals for 2-3 seconds
Voltage is less than normal voltage with no electrical load	1. Engine speed too low 2. Clogged spark arrester 3. Defective rotor diode 4. Partial short circuit in winding 5. Defective capacitor	1. Set engine speed to 3720 RPM (62 Hz) with no load 2. Clean arrester. See engine owner's manual 3. Replace both diodes on rotor 4. Check resistance of coils (see *Electrical Component Specifications*, page 2) 5. Replace capacitor
Voltmeter reading more than 10% high with no electrical load	1. Engine speed too high	1. Set engine speed to 3720 RPM (62 Hz) with no load
Voltmeter reading correct with no electrical load, but more than 10% low when electrical load is added	1. Defective rotor diode 2. Electrical load too high 3. Engine not running properly	1. Replace both diodes on rotor 2. Do not overload generator 3. Contact an authorized engine service center
Engine will not start	1. Fuel level too low 2. Fuel cock not in "O" (open) position 3. Diesel fuel not reaching the fuel injection pump or nozzle 4. Speed control lever not in START position 5. Lube oil level not correct 6. Fuel injection nozzle not working right 7. Recoil starter not pulled quickly and firmly enough 8. Spark arrester clogged by carbon 9. Battery not discharging	1. Add fuel to fuel tank 2. Move fuel cock to "O" (open) position 3. See qualified Yanmar service person 4. Move speed control lever to START position 5. Add lube oil to engine. 6. See qualified Yanmar service person 7. When starting engine with recoil starter, pull starter rope quickly and firmly. You must pull starter rope all the way out. 8. Clean spark arrester. See *Cleaning the Spark Arrester*, page 16 9. Loose battery connections, corrosion on battery terminals, or battery dead

Notes

Dayton® Diesel Electric Generator

NOTE: The five-year limited warranty below covers all non-engine parts of this generator including the alternator. Yanmar warrants the engine. See engine owner's manual for engine warranty information.

LIMITED WARRANTY

Dayton Five-Year Limited Warranty. Professional-duty electric generator alternators, Models 3ZC06B and 4W315B, are warranted by Dayton Electric Mfg. Co. (Dayton) to the original user against defects in workmanship or materials under normal use for five years after date of purchase. Any part which is determined by Dayton to be defective in material or workmanship and returned to an authorized service location, as Dayton designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at Dayton's option. For limited warranty claim procedures, see PROMPT DISPOSITION below. This limited warranty gives purchasers specific legal rights which vary from state to state.

Limitation of Liability. To the extent allowable under applicable law, Dayton's liability for consequential and incidental damages is expressly disclaimed. Dayton's liability in all events is limited to, and shall not exceed, the purchase price paid.

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